

Claims:

This listing of claims is intended to replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented): A serial data bus having a data line for the transmission of electrical signals representing bit states and having a plurality of multi-master subscribers between which messages can be exchanged via the data line in an event-driven manner according to the broadcast principle, the serial data bus comprising:

at least two subscribers each including a transmission/reception head which can be inductively coupled to the data line and via which electrical signals can be tapped contactlessly from the data line and transmitted onto it, and in that an amplifier which receives electrical signals that have been transmitted inductively onto the data line by the at least two subscribers, and couples them back into the data line after their amplification, is DC-connected to the data line.

2. (previously presented): The serial data bus according to Claim 1, characterised in that the messages contain priority bits by the reception of which, in the event of simultaneous message transmissions by a plurality of subscribers, a subscriber can determine whether it has priority to transmit data bits by means of a comparison with priority bits which it itself transmits.

3. (previously presented): The serial data bus according to Claim 2, characterised in that the subscriber does not have priority to transmit data bits when it receives a signal that represents a dominant logical bit state and it approximately simultaneously transmits a signal that represents a recessive logical bit state.

4. (previously presented): The serial data bus according to Claim 3, wherein the signal representing the dominant bit state is a current pulse and the signal representing the recessive bit state is the absence of a current pulse.

5. (previously presented): The serial data bus according to Claim 1, wherein the transmission/reception head comprises:

a transmission coil;

a reception coil;

a transmission module by which electrical signals, which can be applied to the transmission coil, can be generated from digital information;

a reception module by which digital information can be generated from electrical signals that can be tapped by the reception coil; and,

a logic unit, connected to the transmission module and the reception module, for collating and evaluating messages from digital information received by the reception module and for generating digital information for the transmission module.

6. (previously presented): The serial data bus according to Claim 4, wherein message priority can be determined by the logic unit.

7. (previously presented): The serial data bus according to Claim 1, wherein after reception of the electrical signal from one of the at least two subscribers, the amplified signals can be transmitted onto the data line by the amplifier within approximately 25-50% of a cycle length which lies at least between two signals transmitted onto the data line by one of the at least two subscribers.

8. (previously presented): The serial data bus according to Claim 1, wherein the messages have the format established in the CAN standard.
9. (previously presented): The serial data bus according to Claim 1, wherein one of the at least two subscribers is arranged so that it can travel along the data line.
10. (previously presented): A motion system having a first part and a second part, which is arranged mobile relative to the first part, wherein subscribers of a data bus according to Claim 9 are arranged statically on the two parts.
11. (previously presented): The motion system according to Claim 10, adapted for design as a track-bound transport system having a track and a plurality of vehicles that travel along the track, the transport system comprising, for communication between the vehicles, a data bus according to Claim 9 whose data line is arranged along the track of the transport system and whose subscribers are the vehicles.
12. (previously presented): The motion system according to Claim 11, wherein at least one vehicle comprises a vehicle control connected to the transmission/reception head.
13. (previously presented): The motion system according to Claim 11, wherein the amplifier is connected to a control unit for controlling the vehicles along the data bus.
14. (previously presented): The motion system according to Claim 13, wherein the amplifier is connected to the control unit via a CAN bus.
15. (previously presented): The motion system according to Claim 13 being subdivided into a plurality of segments which respectively comprise a data bus having a control unit, and in that the control unit for the individual segments is connected to a superordinate central control.

16. (previously presented): The motion system according to Claim 15, wherein the track for the vehicles extends over a plurality of segments so that vehicles can travel over segment boundaries.

17. (previously presented): The motion system according to Claim 11 being designed as an overhead conveyor system for transporting objects.

18. (previously presented): A serial method for the event-driven transmission of messages between a plurality of multi-master subscribers according to the broadcast principle via a data bus, the method comprising the steps of:

contactless transmission of an electrical signal by a subscriber onto a data line of the data bus via a transmission/reception head, coupled inductively to the data line, of the subscriber;

reception of the electrical signal attenuated by the inductive transmission by an amplifier DC-connected to the data line;

amplification of the received signal in the amplifier;

coupling of the amplified signal onto the data line; and,

reception of the amplified signal transmitted onto the data line by a transmission/reception head, coupled inductively to the data line, of another subscriber.

19. (previously presented): The method according to Claim 18, such that when a subscriber simultaneously transmits a message and receives a message, it determines whether it has the priority to transmit data bits by means of a comparison of received priority bits and self-transmitted priority bits.

20. (previously presented): The method according to Claim 21, such that a subscriber does not have the priority to transmit data bits when it receives a signal that represents a dominant logical bit state and it approximately simultaneously transmits a signal that represents a recessive logical bit state.

21. (previously presented): The method according to Claim 20, such that the signal representing the dominant bit state is a current pulse and the signal representing the recessive bit state is the absence of a current pulse.

22. (previously presented): The method according to Claim 18, such that the messages have the format established in the CAN standard.